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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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07/27/2001

David G. Grier

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27433

7590

11/05/2003

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EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 11/05/2003

se find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,346

Applicant(s)

GRIER, DAVID G.

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/17/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 9-22, 25-27 and 29-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 23, 24 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 Dec. 2001 and 17 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to an amendment filed 19 August 2003 in paper number 7 in which claims 1, 23 and 28 were amended.

Drawings

1. Drawings were received on 17 August 2003. These drawings are acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, 7 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Vaez-Iravani, U.S. Patent No. 6,208,411 B1.

Regarding claims 1-2 and 28, Vaez-Iravani discloses a confocal microscope system (fig 1.) for examination of a sample (106) comprising a source for a laser beam (101); a diffraction medium (102) which interacts with the laser beam to produce a plurality of laser beams (column 4, lines 42-52); an optical component, having a focusing lens (105) with an input aperture (fig. 1, the area just inside the edge of the lens which accepts light) to apply the plurality of laser beams to the sample (fig. 1); and a detector (108) to sense light beams scattered from the sample, the

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optical component further including an optical arrangement causing the plurality of laser beams to pass through a center/certain region (fig. 1, the area surrounding the laser beams, just inside the input aperture) of the input aperture of the focusing lens.

Regarding claims 3-5 and 7, Vaez-Iravani discloses wherein the detector comprises a position-sensitive image-forming photodetector (column 5, lines 8-14), a charge coupled device (CCD), which is a pixellated area detector or a photodetector array.

Claim Rejections – 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaez-Iravani in view of Horikawa, U.S. Patent No. 5,331,456.

Vaez-Iravani discloses the claimed invention except for the position-sensitive image-forming photodetector comprises a complementary metal-oxide-semiconductor (CMOS) detector or microchannel plate. Horikawa teaches that a CCD, a CMD (a charge modulation device which is a CMOS), or a microchannel plate (column 1, lines 52-54) are art-recognized equivalents in the microscope art. It would have been obvious to one of ordinary skill in the art at the time the invention was made use any of the above detectors in the system of Vaez-Iravani to detect the image.

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6. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaez-Iravani.

Vaez-Iravani discloses a method of performing confocal microscopy on a sample comprising the steps of providing a laser beam (101); applying the laser beam to a diffraction medium (102) having a preselected diffractive pattern (column 4, lines 41-52); outputting a plurality of diffracted laser beams from the diffraction medium, the diffracted laser beams having their spatial orientation defined by the preselected diffractive pattern (fig. 1); applying the plurality of diffracted laser beams to particular volume regions of the sample (106) corresponding to the selected diffraction pattern (column 4, lines 56-67); passing the diffracted laser beams through a center region (fig. 1, the area surrounding the laser beams) of an input aperture (fig. 1, the area just inside the edge of the lens which accepts light) of a focusing lens (105) and sensing light beams received from the particular volume regions of the sample (column 5, lines 1-14). Although Vaez-Iravani does not specifically state that the system has diffraction-limited focus, optical elements/systems and their foci are commonly diffraction-limited. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have diffraction-limited optics in the system of Vaez-Iravani to provide the best possible image quality.

Response to Arguments

7. Applicant's arguments filed 17 August 2003 have been fully considered but they are not persuasive.

Applicant argues that Vaez-Iravani does not have an optical arrangement wherein the plurality of laser beams pass through a central region of an input aperture of the focusing lens. The examiner respectfully disagrees. As there is no specific definition of a central region, it can be any region within the input aperture. The examiner is defining the central region as the area surrounding the plurality of laser beams, just inside the input aperture. Therefore the plurality of laser beams of Vaez-Iravani do pass through the central region of the input aperture of the focusing lens.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF
October 22, 2003


MARK A. ROBINSON
PRIMARY EXAMINER